UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,213	09/26/2001	Wen-Hsiao Peng	042390.P11905	2889

8791 7590 01/12/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030	**EXAMINER** PHILIPPE, GIMS S

ART UNIT	PAPER NUMBER
2621	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>11 July 2006</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-44</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>1-44</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some *   c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1.   Applicant's amendment received on July 11, 2006 has been fully considered and

entered, but the arguments are moot in view of the new ground(s) of rejection.

Response to Arguments

The Examiner noted the arguments made with respect to all the claims. It is the

examiner's belief that the newly cited prior art discloses the limitations of the present

application. The examiner also noted the arguments made with respect to claims

indicated allowable initially in a previously mailed office action. It is the examiner's

belief that the mailed rejection was necessary and the response to the office action

would make the record clear. The applicant is urged to review the cited portions of the

new prior art cited in order to show the difference between what has been claimed and

the prior art. The argued "fractional part of the quantized value" is considered met by

Keith as shown in the action. Finally, the applicant is urged to review all the "machine

readable medium" claims in order to avoid 101 rejection and also to expedite

prosecution.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine,
> manufacture, or composition of matter, or any new and useful improvement
> thereof, may obtain a patent therefor, subject to the conditions and requirements
> of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

3.   Claims 12-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 12, 17, 19 and 21 defines a machine-readable medium embodying functional descriptive material. However, the claims do not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the

medium and will be statutory in most cases since use of technology permits the function

of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of

the presently claimed [a computer program, an algorithm, a medium, a program

providing medium, a memory, etc – whatever is claimed] can range from paper on

which the program is written, to a program simply contemplated and memorized by a

person. The examiner suggests amending the claim to embody the program on

"computer-readable medium" or equivalent in order to make the claim statutory. Any

amendment to the claim should be commensurate with its corresponding disclosure.

Note: It is suggested that the applicant amends the claims to reflect "a computer

readable medium embodied with a computer program, which when executed by a

computer, cause the computer to perform operations comprising..."

Dependent claims 13-16, 18, and 20 should be amended to reflect the suggested

change.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was
made.

3.   Claims 1-27, and 34-40 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Van der Schaar et al. (US Patent no. 6788740) in view of Wu et al.

(US Patent no. 6700933), and further in view of Keith et al. (US Patent no. 4785349).

Regarding claims 1, 12, and 23, Van der Schaar discloses a system and method

comprising the steps of quantizing coefficients into quantized values (See fig. 2, DCT

unit 214 and quantization unit 216), and encoding into an enhancement layer bitstream

(See fig. 2, items 252 and 256, and col. 8, lines 16-30).

It is noted that Van der Schaar et al. is silent about coefficients representing input

data as specified in the claims.

Wu discloses quantizing coefficients wherein the coefficients represent input data

(See Wu col. 21, lines 57-67, and col. 23, lines 3-22).

Therefore, it is considered obvious that one skilled in the art at the time of the

invention would recognize the advantage of modifying Van der Schaar's quantization

step by incorporating the teaching of Wu. The motivation for performing such a

modification in Van der Schaar is to provide an efficient layered video coding scheme

that adapts to bandwidth fluctuation and also exhibits good error recovery

characteristics as taught by Wu (See Wu col. 3, lines 27-30).

It is also noted that although Wu encodes the video data into base and

enhancement layers (See Wu fig. 9, items 210, 212 and 220; and col. 6, lines 2-4 and

lines 49-61), the combination of Van der Schaar and Wu is silent about each quantized

value having an integer part and a fractional part as claimed.

However, Keith discloses an encoding method and apparatus wherein the

quantized value for a coefficient having an integer part and a fractional part as specified

in the claims (See Keith fig. 54, items 5406, 4858 and 4828, and col. 40, lines 30-59).

Therefore, it is considered obvious that one skilled in the art at the time of the

invention would recognize the advantage of modifying the quantizing step of the

proposed combination of Van der Schaar and Wu by incorporating Keith quantized

value for a coefficient having an integer part and a fractional part in the encoding

method. The motivation for performing such a modification in the proposed combination

is to preserve and represent the small changes in the quantization of the frames of the

motion video signal.

Regarding claims 6-11, and 17-22, most of the limitations of these claims have been

noted in the rejections of claims 1, 12, 23. In addition, Van der Schaar discloses a

method comprising decoding an enhancement layer bitstream into quantized fractional

values representing enhancement layers (See col. 9, lines 38-55), applying an inverse

quantization to the quantized values to create coefficients representing the

enhancement layers (See inverse quantization unit 224 and residual calculator, and col.

9, lines 56-65), combining the coefficients representing the enhancement layers with

coefficients representing a base layer (See Decoded Video of from residual unit 356 of

Fig. 3, and col. 9, lines 5-37), and applying an inverse transformation to the combined

coefficients (See inverse transformation unit 354 of fig. 3, and col. 7, lines 63-66).

As per claims 34 and 39, all of the limitations of these claims have been noted in the

above rejection of claims 1, 12, and 23.

As per claims 2, 13, and 24, the combination of Van der Schaar, Wu and Wang further

encodes the integer part of the base layer (See Vander Schaar col. 7, lines 39-54).

As per claims 3, 14, 25, Van der Schaar further transforms inputs into coefficients (See

col. 7, lines 23-33).

As per claims 4, 15, 26, and 35-37, Van der Schaar further suggests removing temporal

redundancies (See col. 3, lines 32-45).

As per claims 5, 16, 27, and 38, Van der Schaar further suggests frequency ordered

enhancement layers (See col. 7, lines 4-22).

As per claim 40, Van der Schaar further adds temporal redundancies to the base layer

(See col. 7, lines 43-66).

4.   Claims 28-33, and 41-44 are rejected under 35 U.S.C. 103(a) as being

unpatentable over De Bonnet et al (US Patent no. 6,510,177) in view of Wu et al. (US

Patent no. 6700933).

As per claims 28, 30, 32, 41 and 43, De Bonnet et al discloses in fig. 1 a system

comprising a processor (See fig. 1, processor 102); a memory coupled to the processor

though a bus (See system memory 104 connected to bus 106); and a decoding process

executed from the memory by the processor to cause the processor to decode an

enhancement layer bitstream into quantized fractional values representing

enhancement layers (See fig. Video adaptor 148, and col. 8, lines 8-12), to apply an

inverse quantization to the quantized fractional values to create coefficients

representing the enhancement layers (See col. 16, lines 50-56), to apply an inverse

transformation to the coefficients to create the enhancement layers, and to combine the

enhancement layers with a base layer (See col. 16, lines 50-55).

It is noted that De Bonnet is silent about coefficients representing input data as

specified in the claims.

Wu discloses quantizing coefficients wherein the coefficients represent input data

(See Wu col. 21, lines 57-67, and col. 23, lines 3-22).

Therefore, it is considered obvious that one skilled in the art at the time of the

invention would recognize the advantage of modifying De Bonnet quantization step by

incorporating the teaching of Wu. The motivation for performing such a modification in

Van der Schaar is to provide an efficient layered video coding sheme that adapts to

bandwidth fluctuation and also exhibits good error recovery characteristics as taught by

Wu (See Wu col. 3, lines 27-30).

As per claims 29, 31, 33, 42 and 44, De Bonet further discloses adding temporal

redundancies to the base layer (See De Bonet col. 16, lines 5-37).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Gims S. Philippe whose telephone number is (571) 272-

7336. The examiner can normally be reached on M-F (10:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dastouri Mehrdad can be reached on (571) 272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

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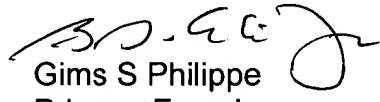
Gims S Philippe
Primary Examiner
Art Unit 2621

GSP

January 7, 2007